

PROPOSED LEAKING UST (LUST) CASE CLOSURE

The Arizona Department of Environmental Quality (ADEQ) is considering closure of the following leaking underground storage tank (LUST) cases:

LUST Case File #0587.02
Facility ID # 0-004861
La Paz County

Former Ted's Truck Stop
965 W. Main Street
Quartzsite, Arizona 85346

The former Ted's Truck Stop was located at 965 West Main Street in Quartzsite and encompassed approximately 15 acres over several parcels: 306-027-34B (965 W. Main St. which was part of parcels 306-027-32 and 306-027-34), 306-027-35C (1035 W. Main St.), and 306-29-005B (1067 W. Main St.). The facility is currently not in operation, but based on historical aerial photographs, reports, and interviews with local residents, the site facilities consisted of two large refueling areas, two tire service areas, a restaurant, two mobile homes, and two modular office buildings. The eastern portion of the site has been used seasonally as a trailer and recreational vehicle dealership. The canopy for the dispenser area and several buildings remain on the eastern portion of the site. The western portion of the site is mostly vacant with remnants of the previous developments associated with the truck stop operations. This LUST site is located to the southwest of the closed Tyson Wash Water Quality Assurance Revolving Fund (WQARF or state Superfund) site where the contaminants of concern (CoCs) were tetrachloroethylene (PCE) and trichloroethylene (TCE).

According to documentation in the WQARF project files, there have been an estimated six above ground storage tanks (ASTs) and two underground storage tanks (USTs) in service at the site at different times between 1976 and 1998. The USTs on the site were located on parcel 306-027-35C and contained gasoline and diesel fuel. Approximately 12,000 gallons were stored in each tank. The USTs were in service from 1978 until they were removed in 1998. UST closure activities were completed by the property owner in 1998. An investigation of the UST tank pit and associated piping was completed in 2000. The UST owner/operator was identified as Ted's Truck Center Inc. #1. LUST release .01 was assigned in 1989 but closed in 1993. LUST release .02 was assigned to the two USTs in July 2000. ADEQ was notified in 2000 that the water from a private domestic well near the Ted's Truck Stop site had a gasoline odor. In response to that complaint, the UST program initiated sampling of approximately 20 domestic wells in the area. Two of the domestic wells had detections of benzene above the Aquifer Water Quality Standard (AWQS) of 5 micrograms per liter ($\mu\text{g/L}$). Three of the domestic wells also had detections of toluene, total xylenes, naphthalene, and oil range organics. ADEQ issued bottled water to the private residences affected by the contamination. In May 2004, ADEQ again sampled private domestic wells near the Ted's Truck Stop site. Petroleum hydrocarbon contamination was found in three domestic wells in the sampled area. Results indicated that 2 wells were above the AWQS of 5 $\mu\text{g/L}$ for benzene and the third well indicated a concentration of benzene at 3.6 $\mu\text{g/L}$.

In June 2004, ADEQ's WQARF program began a preliminary investigation of the Ted's Truck Stop property and the site was renamed Main Street and Kofa Avenue. Results indicated that there was wide spread petroleum hydrocarbon contamination in the groundwater across the entire site. Groundwater beneath the site was contaminated with benzene above the AWQS. Free product consisting of diesel and gasoline has been detected in four wells on site. Total petroleum hydrocarbons (TPH) in soil are present

above the non-residential soil remediation level (nrSRL) of 18,000 mg/kg. Benzene concentrations have been detected in soil above the residential soil remediation level (rSRL) of 0.62 mg/kg, but below the non-residential SRL of 1.4 mg/kg. ADEQ conducted investigation and remediation activities at the site under the WQARF program until 2012. Remediation activities included installation and operation of a soil vapor extraction (SVE) system, an ozone sparge system, and a groundwater pump and treat system (GWE). The remedial system was shut down in 2012 when the WQARF program determined that funding could no longer justify further operation of the remedial system and all was removed in June 2014. The site had 23 groundwater monitoring wells (TTMW-18 was abandoned in 2012 due to property redevelopment), 20 dual phase extraction wells of which 14 had operating pumps, 5 SVE wells, and 19 ozone sparging wells.

The State Lead Unit continued site characterization of the groundwater with the installation of eight monitoring wells (SLUMW-1 through MW8) in 2014. Remediation of the groundwater continued with a new ozone sparge system and also using PersulfOx®, which promotes rapid and sustained *in situ* oxidation of a wide-range of organic contaminants like petroleum hydrocarbons. Injections into specific monitoring wells occurred between August 2014 and February 2017. In April 2014, three soil confirmation borings were installed to a depth of 45 feet bgs, and were located at the former tank pit and at two dispensers.

Data provided by TetraTech, contractor to the State Lead Unit, and all other available site information has been used by ADEQ to determine whether remaining levels of contaminants at the site are adequately protective of human health and the environment.

A site specific risk assessment and detailed file/information search were also completed. VOC analytical groundwater results in SLUMW-8 show that benzene concentration remain above the applicable AWQS of 5.0 µg/L. VOC analytical data groundwater results in TTMW-12 show that methyl tert butyl ether (MTBE) concentrations remain above the applicable Tier 1 Corrective Action Standard of 94 µg/L. The results for all other monitoring wells show no contamination present over applicable regulatory standards and the data is available in the LUST file.

Based upon the results of remedial activities and site specific information, the above-referenced LUST site is eligible for alternative LUST closure under Arizona Revised Statutes (A.R.S.) §49-1005(E). Arizona Administrative Code (A.A.C.) R18-12-263.04 allows case closure of a LUST site with groundwater contamination above the Arizona AWQS or Tier 1 Corrective Action Standards. ADEQ has considered the results of a site specific assessment and the rule specific criteria below:

1. *Threatened or impacted drinking water wells:* According to the Arizona Department of Water Resources (ADWR) records, there are 310 registered wells within ½ mile of the site. Of these registered wells, 165 are exempt and 10 are non-exempt. There are 68 monitoring wells and 67 wells registered as other. According to the *Town of Quartzsite 2014 General Plan*, up until 1994 residents of the Town obtained their water through individual private wells. As a result, there are several hundred private wells within the Town limits. The Town municipal water system (AZ0415346), according to the Town of Quartzsite's *2017 Drinking Water Consumer Confidence Report* dated June 2018, obtains water from Well #1 is located on Quail Trail, and draws water from greater than 1,000 feet bgs. This well has been in service since 1994. Well #2 is located on Kofa Avenue, and draws water from greater than 1,000 feet bgs. This well has been in service since 2004. The Kofa Well Site is considered the main well for the Town's water needs. The two well sites not only help meet the needs of the current population but also have the capacity to service the needs for the future potential growth of Quartzsite, based on the population growth projection in the introduction of the 2014 general plan. According to the *2017*

Drinking Water Consumer Confidence Report, VOCs which include benzene and MTBE were not reported above laboratory reporting limits. ADEQ sent out a Water Provider Questionnaire to the Town of Quartzsite with the request that it be completed and returned within 30 days. The Town did not respond. The Town provides its municipal water from deep underground aquifers, however the Town does have rights to 1,070 acre-feet/year of water from a fourth priority Colorado River water entitlement from 1999. According to a letter dated May 24, 2018 from ADWR to the U.S. Department of the Interior, Quartzsite has not used any of its allotment, and doesn't have the infrastructure to receive, treat and convey the water and is pursuing leasing its allotment to the Central Arizona Water Conservation District for a minimum of 25 years.

The closest active water production well (55-523209) is at the Quartzsite Yacht Club which is located to the west at 1090 Main Street, which is within 500 feet of the LUST site. This well is drilled to a depth of 785 feet bgs and is screened between 645 and 765 feet bgs. This water system is regulated by ADEQ as public water system AZ0415384 for a transient population of 200 persons and 37 service connections. The ADEQ Safe Drinking Water Database shows the most recent laboratory analysis was for nitrates, with no violation. This water system is not required to have routine VOC analysis conducted.

2. *Other exposure pathways:* In April 2014, three soil confirmation borings were installed to a depth of 45 feet bgs, and were located at the former tank pit and at two dispensers. Soil samples were collected at 10, 20, 30 and 45 feet bgs. All of the soil samples were tested for VOCs using EPA Method 8260B. Two samples from each boring were also tested for polynuclear aromatic hydrocarbons (PAHs) using EPA Method 8310, tetra ethyl lead (TEL) using California Method HML 939-M, and 1, 2-Dibromoethane (EDB) using EPA Method 8011. TEL and EDB are indicators of leaded gasoline, which may have been used at the site given the age of the UST system. The soil data only showed low concentrations of PAHs, including naphthalene. Naphthalene was also detected in the VOC method. The concentrations of all of these compounds were all well below the applicable rSRL and the minimum groundwater protection levels (GPLs). Incidental dermal contact with the groundwater is considered *de minimis* risk. In a ¼ mile land use/receptor survey, there are no schools, day care centers, hospitals or other sensitive populations.

3. *Groundwater plume stability:* Groundwater plume stability is demonstrated by the remaining VOC contamination (benzene and MTBE) present over a regulatory standard is limited to monitoring wells SLUMW-8 and TTMW-12, respectively based on the most recent groundwater sampling event conducted in October and November 2017. There are several monitoring wells located down gradient of SLUMW-8 which have not shown any VOC contamination present for several years. Monitoring well TTMW-19 which is located down gradient on Elsie Lane has occasionally shown VOC contamination present over applicable regulatory standards, but currently does not based on the most recent sampling event. SLUMW-5 is also located on Elise Lane near TTMW-19 and has no VOC concentrations over applicable regulatory standards based on the most recent sampling event. Further down gradient monitoring wells like SLUMW-4 has never shown any VOC contamination present. The highest benzene and MTBE concentrations in TTMW-12 were in May 2007 at 4,400 and 75,000 µg/L, respectively. The historic VOC concentrations in groundwater have declined by several magnitudes. The current benzene and MTBE concentrations are <2.0 and 740 µg/L, respectively in TTMW-12. In SLUMW-8 located down gradient from TTMW-12, the benzene and MTBE concentrations have decreased from 240 and 300 µg/L respectively, in May 2014 to only the benzene contamination remaining at 39 µg/L. TetraTech evaluated the groundwater data using the Mann-Kendall trend test to assist in identifying increasing and/or decreasing concentration trends at wells SLUMW-8 and TTMW-12 for benzene and MTBE. The data set used was for the eleven most recent sampling events between 2014 and 2017. The Mann-Kendall

trend test indicated there was insufficient data to determine a trend for benzene in TTMW-12, since all of the data was reported as $<2.0 \mu\text{g/L}$. The no trend indication also supports plume stability. For MTBE, the trend is identified as increasing, although the historic analytical data previously mentioned shows a significant decrease in concentration. The three most recent sampling events show a downward trend in the MTBE concentration. For SLUMW-8, there is no trend for benzene or MTBE, which also supports plume stability. TetraTech also evaluated plume stability using BIOSCREEN. The No Degradation scenario over 30 years, based on the usual laboratory reporting limit of 0.002 mg/L , the detectable concentration of benzene in groundwater would be limited to 100 feet downgradient of the source. Under the 1st Order decay scenario, the plume remains stable over time, with the plume extent limited to less than 200 feet downgradient of the source.

4. *Characterization of the groundwater plume:* Groundwater samples have been collected at the site since 2004. Dissolved-phase petroleum hydrocarbons have been characterized. The maximum benzene and MTBE concentrations in monitor well TTMW-12 were at $4,400$ and $76,000 \mu\text{g/L}$, respectively in May 2007. Groundwater data before 2014 is available in the WQARF project file. Historic groundwater data is available from 2014 to 2017 for the eight monitoring wells installed by the State Lead Unit. The depth to groundwater is approximately 44 feet bgs based on the groundwater monitoring and sampling event conducted in October-November 2017. The groundwater samples were analyzed for VOCs, and PAHs. MTBE exceeds the Tier 1 Corrective Action Standard of $94 \mu\text{g/L}$ in monitoring well TTMW-12, which is located on-site. In the off-site well SLUMW-8, the benzene concentration is $39 \mu\text{g/L}$.

5. *Natural Attenuation:* The groundwater plume has migrated off site to the adjacent Main Street as demonstrated by the benzene concentration present in SLUMW-8. No VOC concentrations exceed applicable regulatory standards in farther down gradient monitoring wells (SLUMW-5, SLUMW-4 and TTMW-19). VOC contamination has not migrated more than 30 feet from the source well. Dissolved oxygen concentrations were collected in the TTMWs between 2007 and 2012, and shows the groundwater to be aerobic (oxygen concentrations over 0.5 milligrams per liter (mg/L), which supports that natural attenuation is occurring as biodegradation. Benzene will continue to degrade under these aerobic (preferred) or anaerobic groundwater conditions. MTBE contamination over the applicable regulatory standard remains only on site. MTBE prefers to remain dissolved in groundwater, so it takes it longer to attenuate. TetraTech evaluated the 2017 groundwater data from the SLUMWs using BIOSCREEN. After five years, the Instantaneous Reaction scenario defaults to a concentration of 0 mg/L . The No Degradation scenario indicates that the plume continues to expand downgradient with a concentration of 0.001 mg/L at 800 feet downgradient and appears to remain static through a period of at least 30 years. However, based on the usual laboratory reporting limit is 0.002 mg/L , the detectable concentration of benzene in groundwater would be limited to 100 feet downgradient of the source. Under the 1st Order decay scenario, the plume remains stable over time, with the plume extent limited to less than 200 feet downgradient of the source. Similar to the benzene modeling output for the 5-year period, the Instantaneous Reaction scenario for MTBE defaults to a concentration of 0 mg/L . Under the 1st Order Decay scenario, the MTBE Tier 1 Corrective Action Standard of 0.094 mg/L would be approximately 450 feet downgradient of well TTMW-12 and under the No Degradation scenario, the MTBE Tier 1 Corrective Action Standard of 0.094 mg/L concentration would be at about 700 feet downgradient of the source area. The 1st Order Decay and No Degradation scenarios match the November 2017 monitoring results at downgradient wells CSW-4, SLUMW-5, and TTMW-19. As would be expected under the No Degradation scenario, the plume would continue to expand downgradient over a 30-year period. After 10 years, a concentration equal to the MTBE Tier 1 Corrective Action Standard of 0.094 mg/L would be at approximately 1,300 feet downgradient. After 30 years, this concentration would extend to approximately 3,200 feet downgradient of the source area.

Under the 1st Order decay scenario, the extent of the plume as manifested by the Tier 1 Corrective Action Standard concentration of 0.094 mg/L, would extend to approximately 450 feet downgradient of the source after 10 years. The plume would remain stable through 30 years, receding minimally after 10 years, the maximum time period modeled.

6. *Removal or control of the source of contamination:* Source control has been completed by the UST system being permanently closed in August 1998. Between 2007 and 2012, the GWE system has processed 11,397,000 gallons of water and removed 610 pounds of total petroleum hydrocarbons (TPHs), 2.1 pounds of benzene, and 160 pounds of MTBE and the SVE system removed approximately 95,345 pounds of TPHs, 1,259 pounds of benzene, and 3,422 pounds of MTBE. In-situ chemical oxidation treatments of PersulfOx® were also used to treat the groundwater contamination in selected monitoring wells between August 2014 and February 2017.

7. *Requirements of A.R.S. §49-1005(D) and (E):* The results of the corrective action completed at the site assure protection of public health, welfare and the environment, to the extent practicable, the clean-up activities completed at this site allow for the maximum beneficial use of the site, while being reasonable, necessary and cost effective.

8. *Other information that is pertinent to the LUST case closure approval:* The facility and LUST files were reviewed for information regarding prior cleanup activities, prior site uses and operational history of the UST system prior to removal.

Groundwater data for SLUMW-8 (off site at Main Street)

Date	Benzene AWQS is 5 µg/L	MTBE Tier 1 Standard 94 µg/L	Depth to water (feet)
10/31/17	39	86	43.8
6/7/17	12	150	44.2
ISCO- Feb. 2017	--	--	--
2/7/17	160	440	44.35
9/30/16	85	310	44.51
5/5/16	59	460	44.60
12/16/15	50	420	45.09
8/4/15	27	260	45.28
5/12/15	6.6	62	45.34
ISCO- Dec. 2014	--	--	--
12/4/14	25	140	45.50
ISCO- Aug. 2014	---	---	--

Groundwater data for TTMW-12 (on site)

Date	Benzene AWQS 5 µg/L	MTBE Tier 1 Standard is 94 µg/L	Depth to water (feet)
11/1/17	<2.0	740	44.92
6/8/17	<2.0	1000	45.45
ISCO- Feb. 2017	--	--	--
2/7/17	<2.0	1400	45.77
9/29/16	<2.0	930	45.97
5/5/16	NA	NA	NM
12/16/15	<2.0	440	46.88
8/4/15	<2.0	120	47.01
5/12/15	<2.0	90	47.07
ISCO- Dec. 2014	--	--	--
12/3/14	<2.0	230	47.40
5/8/14	<2.0	550	47.48
5/9/12	<1.0	30	50.47
6/15/11	<1.0	525	54.62
5/26/10	<1.0	1,440	53.36
5/19/09	<1.0	1,350	51.87
5/20/08	2,900	62,000	47.93
5/21/07	4,400	75,000	46.90
9/13/06	1,600	NA	46.76
2/1/06	200	2,500	46.62

Groundwater data for TTMW-17 (on site near TTMW-12)

Date	Benzene AWQS 5 µg/L	MTBE Tier 1 Standard is 94 µg/L	Depth to water (feet)
11/1/17	<2.0	39.0	43.97
6/7/17	<2.0	130	44.44
9/29/16	<2.0	8.2	44.9
5/4/16	<2.0	14.0	45.05
12/17/15	<2.0	3.0	45.6
8/5/15	<2.0	<1.0	45.58
5/12/15	<20	<100	45.93
ISCO- Dec. 2014	--	--	--
12/3/14	<2.0	170	45.94
5/9/14	<2.0	1200	46.19
5/9/12	<1.0	1,000	48.88
6/14/11	<10	4,340	53.71
5/24/10	<10	8,310	52.83
5/19/09	<1.0	12,900	51.57
8/11/08	<20	12,000	49.23

Groundwater data for SLUMW-5 (off site down gradient of SLUMW-8)

Date	Benzene AWQS is 5 µg/L	MTBE Tier 1 Standard 94 µg/L	Depth to water (feet)
11/3/17	<2.0	10.0	40.14
12/16/15	<2.0	9.0	40.80
8/3/15	<2.0	7.2	40.84
5/11/15	<2.0	4.9	40.86
12/2/14	<2.0	10.0	41.04
5/8/14	<2.0	9.1	41.15

Groundwater data for TTMW-19 (off site downgradient from site)

Date	Benzene AWQS is 5 µg/L	MTBE Tier 1 Standard 94 µg/L	Depth to water (feet)
11/3/17	<2.0	10	38.53
6/8/17	11	11	38.75
12/17/15	2.9	8.8	39.19
5/5/15	2.3	8.8	39.3
12/4/14	<2.0	7.1	39.49
5/8/14	17	7.3	45.58
5/8/12	1.6	<5.0	40.12
6/13/11	<1.0	2.3	40.32

Groundwater data for SLUMW-4 (off site farthest down gradient)

Date	Benzene AWQS is 5 µg/L	MTBE Tier 1 Standard 94 µg/L	Depth to water (feet)
11/3/17	<2.0	<1.0	34.38
12/16/15	<2.0	<1.0	35.04
8/3/15	<2.0	<1.0	35.02
5/11/15	<2.0	<1.0	34.86
12/2/14	<2.0	<1.0	35.21
5/8/14	<2.0	<1.0	NM

Site specific information concerning this closure is available for review during normal business hours at the ADEQ Records Center <http://www.azdeq.gov/function/assistance/records.html> , 1110 W. Washington St., Suite 140, Phoenix, AZ 85007. ADEQ welcomes comments on the proposed LUST case closure. Please call the Records Center at 602-771-4380 to schedule an appointment. A 30-day public comment period is in effect **August 17, 2018 and ending September 17, 2018**. Comments should be submitted in writing to the Arizona Department of Environmental Quality, Waste Programs Division, and Attention: Rick Brunton, 1110 W. Washington Street, Phoenix, AZ 85007.

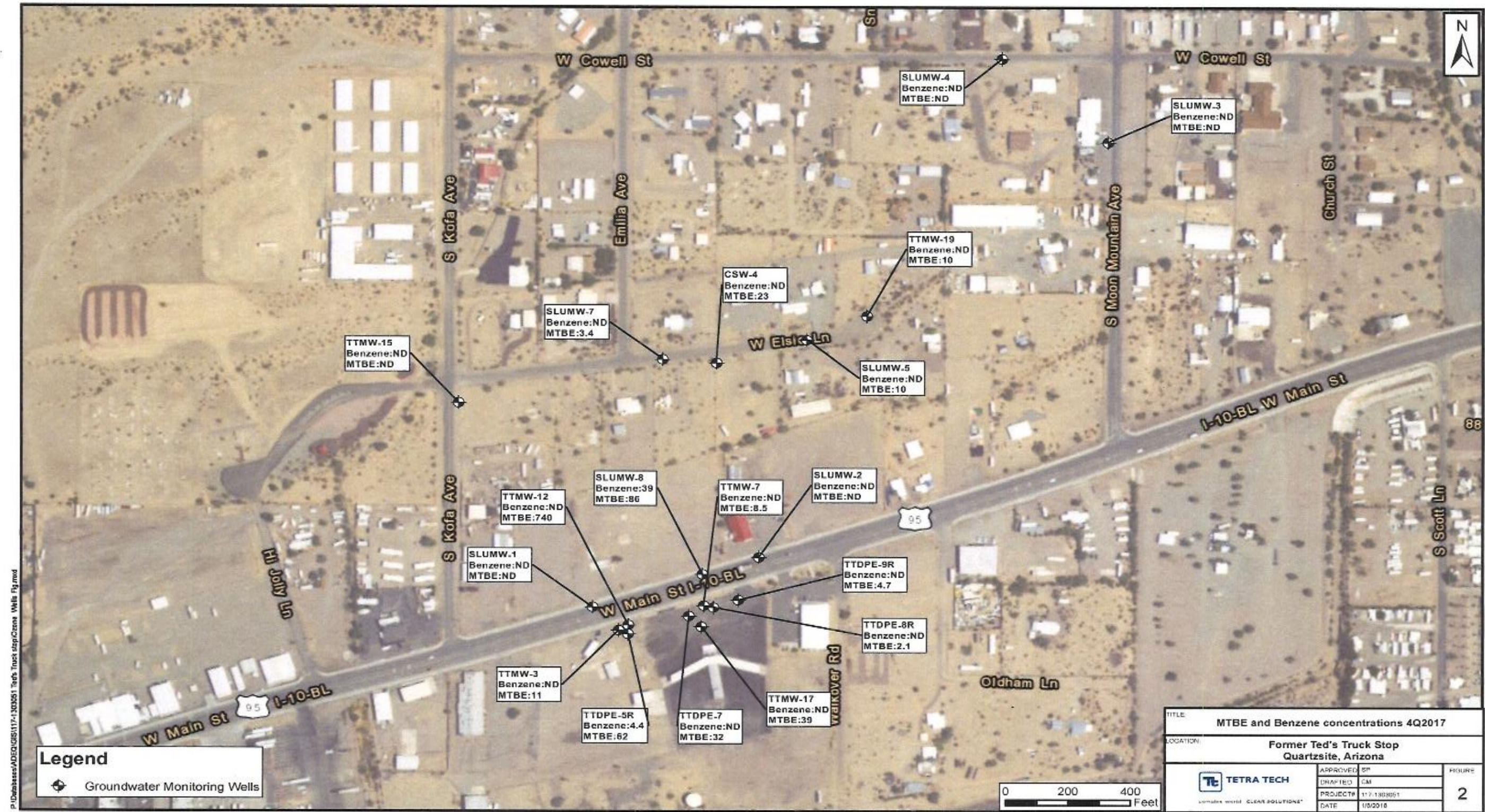
If sufficient public interest is demonstrated during the public comment period, ADEQ may announce and hold a public meeting. ADEQ will consider all submitted written comments and reserves the right to respond to those comments following the public comment period. For more information on this notice, please contact the Project Manager, Rick Brunton at (602) 771-4745 or at rlb@azdeq.gov or the Sr. Risk Assessor, Debi Goodwin at (602) 771-4453 or at dgl@azdeq.gov.

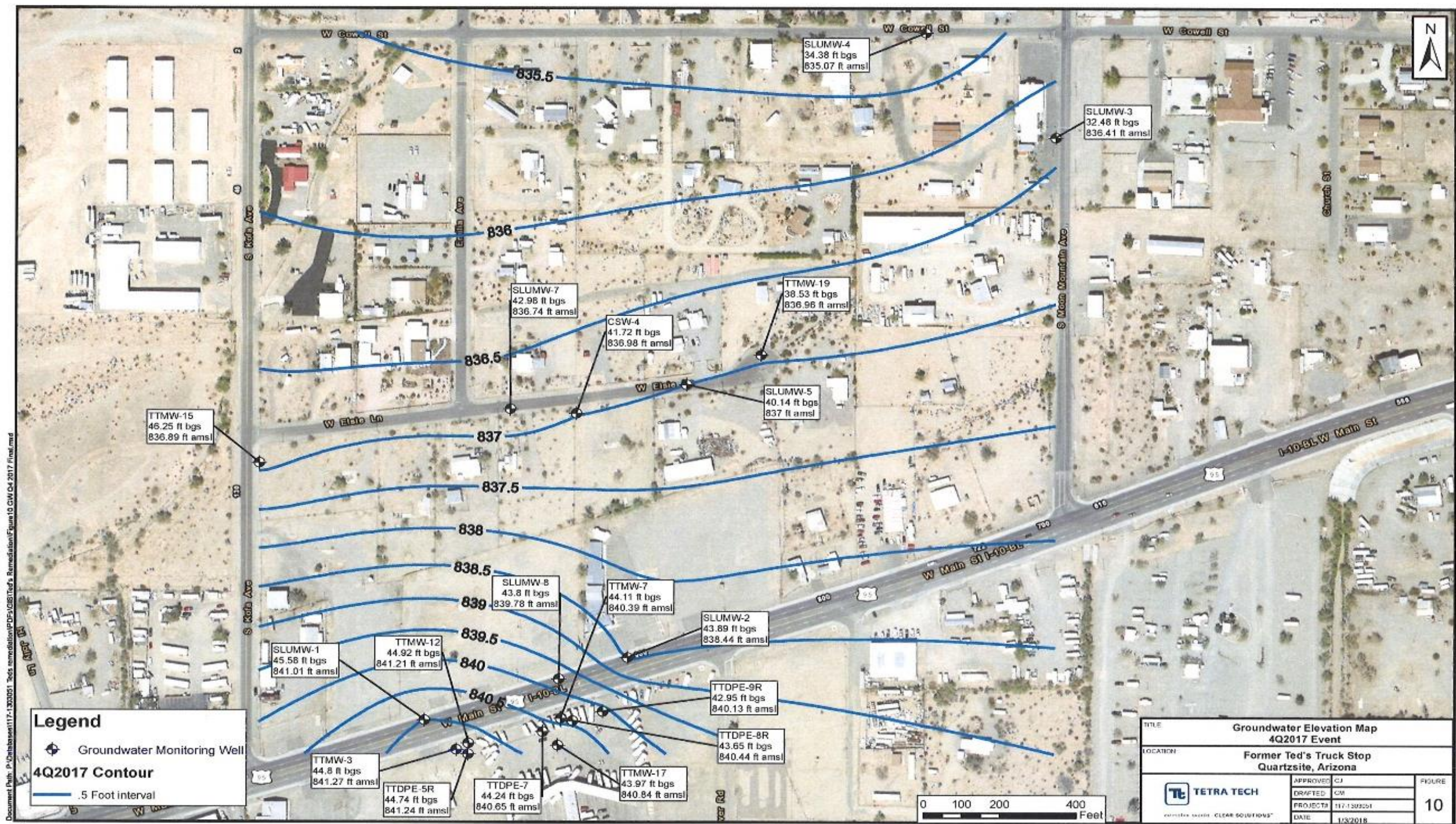
Copies of the cited statutes and rules can be found at:
<http://www.azleg.gov/ArizonaRevisedStatutes.asp?Title=49>, and
http://www.azsos.gov/public_services/Title_18/18-12.htm

ADEQ will take reasonable measures to provide access to department services to individuals with limited ability to speak, write or understand English and/or to those with disabilities. Requests for language interpretation, ASL interpretation, CART captioning services or disability accommodations must be made at least 48 hours in advance by contacting Ian Bingham, Title VI Nondiscrimination Coordinator at 602-771-4322 or idb@azdeq.gov. Teleprinter services are available by calling 7-1-1 at least 48 hours in advance to make necessary arrangements.

ADEQ tomará las medidas razonables para proveer acceso a los servicios del departamento a personas con capacidad limitada para hablar, escribir o entender inglés y / o para personas con discapacidades. Las solicitudes de servicios de interpretación de idiomas, interpretación ASL, subtítulos de CART, o adaptaciones por discapacidad deben realizarse con al menos 48 horas de anticipación contactando a Ian Bingham, Coordinador de Anti-Discriminación del Título VI al 602-771-4322 o idb@azdeq.gov. Los servicios de teleimpresores están disponibles llamando al 7-1-1 con al menos 48 horas de anticipación para hacer los arreglos necesarios.







former Ted's Truck Stop



April 2, 2018

● Well Registry

--- County

1:18,056

0 0.15 0.3 0.6 mi

0 0.175 0.35 0.7 km

Arizona Department of Water Resources
 Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS,
 FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri
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